Mohamad Zamini

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RESEARCH & MACHINE LEARNING ENGINEER

PhD candidate specializing in multimodal large language models, vision–language reasoning, and token-efficient architectures. Proven experience designing scalable ML systems, building LLM-powered analytics pipelines, and publishing cutting-edge research in vision-language modeling and open-vocabulary segmentation.

EXPERIENCE

Microsoft – Data Science Intern (Bing Maps) | May 2025 – Aug 2025

- Built LLM-driven analytics agent enabling natural-language querying and multi-turn reasoning over large-scale telemetry logs.

- Automated weekly monitoring of retention and engagement metrics using SHAP, ANOVA, and anomaly-aware delta detection.

- Designed scalable data pipelines supporting session-level behavioral modeling.

Numenta – Machine Learning Intern | Jul 2024 – Sep 2024

- Fine-tuned Mistral and LLaMA models with activation sparsity and attention sparsity for efficient inference.

- Developed dynamic context pruning, KWTA mechanisms, and KV caching optimizations.

Petrolern – Digital Innovation Intern | Jun 2022 – Aug 2024

- Designed semantic compression system using deep autoencoders for high-dimensional data.

- Built ML models for geothermal data analysis and improved accuracy through algorithmic optimization.

Lifeweb – NLP Engineer | Jun 2018 – Aug 2019

- Fine-tuned BART for Persian text summarization.

- Implemented BiLSTM-CRF for sequence tagging and matrix factorization for topic modeling.

EDUCATION

PhD, Computer Science – University of Wyoming (2021–Present)

MS, Information Technology Engineering – Tarbiat Modares University (2016-2018)

BS, Computer Engineering – University of Science and Culture (2014-2016)

PUBLICATIONS (SELECTED)

- DouC: Dual-Branch CLIP for Training-Free Open-Vocabulary Segmentation (ICML 2026, under review).

- DAP-CLIP: DINO-Guided Attention for Training-Free CLIP Segmentation (ICML 2026, under review).

- Delta-LLaVA: Token-Efficient Vision-Language Models (WACV 2026).

SKILLS

Python, PyTorch, Transformers, LLM/VLM, Reinforcement Learning, Computer Vision, NLP, Data Science, SHAP, ANOVA, SQL, Git

TEACHING EXPERIENCE

Teaching Assistant: Introduction to Programming, Introduction to Artificial Intelligence, Software Design, Machine Learning